

[File 155] MEDLINE(R) 1950-2008/Sep 05
[File 5] Biosis Previews(R) 1926-2008/Aug W5
[File 73] EMBASE 1974-2008/Sep 05
[File 65] Inside Conferences 1993-2008/Sep 08
[File 35] Dissertation Abs Online 1861-2008/Apr
[File 23] CSA TECHNOLOGY RESEARCH DATABASE 1963-2008/AUG

S1 2020 S AU=(WEINER L? OR WEINER, L?)
S2 3 S AU=(COULL T? OR COULL, T?)
S3 2022 S S1 OR S2
S4 29638 S (EXTERNAL OR FIXATION OR FIXATOR) (5N) (DEVICE? ? OR
APPARAT? OR UNIT OR UNITS OR MECHANISM? OR ASSEMBL?)
S5 4 S S3 AND S4

5/5/1 (Item 1 from file: 155)

Fulltext available through: [STIC Full Text Retrieval Options](#)

MEDLINE(R)

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11061222 PMID: 8090477

Displaced pilon fractures. An update.

Karas E H; Weiner L S

Department of Orthopaedic Surgery, Mount Sinai School of Medicine, New York, New York.

Orthopedic clinics of North America (UNITED STATES) Oct 1994 , 25 (4) p651-63 ,
ISSN: 0030-5898--Print Journal Code: 0254463

Publishing Model Print

Document type: Journal Article; Review

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

Subfile: AIM; INDEX MEDICUS

In the past, displaced pilon (hammer) fractures were considered to be inoperative. When principles for open reduction and internal fixation of pilon fractures were developed, encouraging surgical results emerged. This article deals with the classification, treatment, technique of fixation, and care of this type of fracture. (32 Refs.)

Descriptors: *Ankle Injuries--surgery--SU; *Fracture Fixation, Internal--methods --MT;
*Orthopedic Fixation Devices; *Tibial Fractures --surgery--SU ; External Fixators; Humans;
Internal Fixators; Intraoperative Complications; Postoperative Complications; Tibial
Fractures—classification

5/5/2 (Item 1 from file: 5)

Biosis Previews(R)

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16346872 Biosis No.: 200100518711

Modular fixator assembly

Author: Weiner Lon S

Journal: Official Gazette of the United States Patent and Trademark Office Patents 1250 (1): Sep. 4, 2001 2001

Medium: e-file

Patent Number: US 6283964 Patent Date Granted: September 04, 2001 20010904

Patent Classification: 606-55 Patent Country: USA

ISSN: 0098-1133

Document Type: Patent

Record Type: Abstract

Language: English

Abstract: A modular fixator assembly capable of allowing motion at the wrist during treatment of wrist fractures. The fixator assembly includes a distractor device, a pin outrigger attached to the distractor device, at least one pin for fixating the fracture fragments, and pin clamping assemblies for attaching the pin to the outrigger. The outrigger conforms to the anatomical configuration of the fractured bone thereby enabling direct fixation of the fracture fragments.

5/5/4 (Item 1 from file; 23)

CSA TECHNOLOGY RESEARCH DATABASE

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0008697947 IP Accession No: 200803-71-230481; 200803-61-230080; 2008221008; A08-99-225490

Modular fixator assembly

Weiner, Lon S

, USA

Publisher Url: <http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u=/netacgi/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=6056748.PN.&OS=pn/6056748&RS=PN/6056748>

Document Type: Patent

Record Type: Abstract

Language: English

File Segment: Metadex; Mechanical & Transportation Engineering Abstracts; ANTE: Abstracts in New Technologies and Engineering; Aerospace & High Technology

Abstract:

A modular fixator assembly capable of allowing motion at the wrist during treatment of wrist fractures. The fixator assembly includes a distractor device, a pin outrigger attached to the distractor device, at least one pin for fixating the fracture fragments, and pin clamping assemblies for attaching the pin to the outrigger. The outrigger conforms to the anatomical configuration of the fractured bone thereby enabling direct fixation of the fracture fragments.

[File 155] MEDLINE(R) 1950-2008/Sep 05

[File 5] Biosis Previews(R) 1926-2008/Aug W5

[File 73] EMBASE 1974-2008/Sep 05

[File 65] Inside Conferences 1993-2008/Sep 08

[File 35] Dissertation Abs Online 1861-2008/Apr

- [File 23] CSA TECHNOLOGY RESEARCH DATABASE 1963-2008/AUG
- [File 24] CSA Life Sciences Abstracts 1966-2008/Oct
- [File 45] EMCare 2008/Aug W5
- [File 136] BioEngineering Abstracts 1966-2007/Jan
- [File 95] TEME-Technology & Management 1989-2008/Aug W4
- [File 8] Ei Compendex(R) 1884-2008/Aug W4
- [File 6] NTIS 1964-2008/Sep W2
- [File 2] INSPEC 1898-2008/Aug W2
- [File 144] Pascal 1973-2008/Aug W4

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S1      1077613   S SPINE OR SPINAL OR VERTEBRA OR VERTEBRAL OR VERTEBRAE
OR INTERVERTEBRA?
S2      174031    S (FRACTURE? OR BREAK OR BROKEN OR STABLIZ? OR STABLIS?
OR FASTENER? ?) (5N) (BONE OR WRIST OR JOINT OR KNEE OR LEG OR ARM)
S3      1227756   S S1 OR S2
limitall s3
S4      7254     S (EXTERNAL OR FIXATION OR FIXATOR? ?) ( 5N) (DEVICE? ?
OR APPARAT? OR UNIT OR UNITS OR MECHANISM? OR ASSEMBL?)
S5      5813     S CAGE OR CAGES OR OUTRIGGER? ?
S6      5659     S PIN OR PINS
S7      27342    S SCREW OR SCREWS OR STAKE OR STAKES
S8      119216    S INTERCHANG? OR REMOV? OR MOVEABLE OR MOVABLE OR
MOV??? OR ADJUST? OR MODIF? OR RECONFIGUR? OR RECONSTRUCT? OR REALIGN?
OR REPOSITION?
S9      1387     S S6(S)S8
S10     774      S S6(20N)S8
S11     77       S S10(S) (S4 OR S5)
S12     77       S S11 AND S3
S13     47       RD S12 (unique items)
S14     14       S S13/2003:2008
S15     33       S S13 NOT S14
S16     85717    S INTERCHANG? OR MOVEABLE OR MOVABLE OR MOV??? OR
ADJUST? OR MODIF? OR RECONFIGUR? OR RECONSTRUCT? OR REALIGN? OR
REPOSITION?
S17     767      S S6(S)S16
S18     109      S S17 AND (S4 OR S5)
S19     2138     S S7(20N)S16
S20     275      S S19 AND (S4 OR S5)
S21     374      S S18 OR S20
S22     221      S S19(S) (S4 OR S5)
S23     321      S S18 OR S22
S24     288      S S23 NOT S12
S25     149      S S24/2003:2008
S26     139      S S24 NOT S25
S27     79       RD S26 (unique items)
S28     79       S S27 AND S3

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15/5/17 (Item 17 from file: 155)

Fulltext available through: [STIC Full Text Retrieval Options](#)

MEDLINE(R)

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04895995 PMID: 1150697

Restoration of function in the knee and elbow with a hinge-distractor apparatus.
Volkov M V; Oganesian O V
Journal of bone and joint surgery. American volume (UNITED STATES) Jul 1975 , 57
(5) p591-600 , ISSN: 0021-9355--Print Journal Code: 0014030
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: AIM; INDEX MEDICUS
External hinged distraction devices using transosseous pins and adjustable attachments were applied to mobilize joint contractures; to reduce old dislocations; and to reduce, immobilize, and compress ununited para-articular fractures. Once these procedures were accomplished the devices were then used to maintain the joint surfaces separated at predetermined distances while kinematically normal joint motion was gradually restored, first passively and then actively. The results in thirty-one knees and twenty-eight elbows treated with these devices were encouraging after follow-ups of one to six years.

15/5/19 (Item 2 from file: 5)
Biosis Previews(R)
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16110839 Biosis No.: 200100282678
Dynamic wrist fixation apparatus for early joint motion in distal radius fractures
Author: Orsak James E; Evans David L (Reprint)
Author Address: Bartlett, TN, USA**USA
Journal: Official Gazette of the United States Patent and Trademark Office Patents 1241 (3): Dec. 19, 2000 2000
Medium: e-file
Patent Number: US 6162223 Patent Date Granted: December 19, 2000 20001219 Patent Classification: 606-59 Patent Assignee: Smith and Nephew, Inc. Patent Country: USA
ISSN: 0098-1133
Document Type: Patent
Record Type: Abstract
Language: English
Abstract: A joint fixator apparatus conforms to the natural axis of rotation of the joint in question, such as a patient's wrist or knee to avoid the possibility of bone fragment displacement and/or fracture reduction. The apparatus includes two fixation rod sections or shaft sections with a spring module therebetween. The spring module is in the form of a flexible coupler that connects to respective ends of the external fixator rod. The module can include a removable clip to restrain the motion of the spring a desired amount such as before healing takes place. The rods can be used to hold pin clamps which then hold bone pins for attachment to selected bones of the patient such as above and below a joint or above and below a fracture. The pin clamps can be moved along the rod sections to provide distraction of the joints for a ligamentotaxis effect in reducing the fracture.

15/5/25 (Item 6 from file: 73)

Fulltext available through: STIC Full Text Retrieval Options

EMBASE

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0072706154 EMBASE No: 1984086570

A system for accurate closed reduction and external fixation of fractures

Wang D.; Dewar M.

Institute of Orthopedics and Traumatology, Beijing, China

Corresp. Author/Affil: : Institute of Orthopedics and Traumatology, Beijing, China

Orthopedics (ORTHOPEDICS) (United States) May 17, 1984 , 7/3 (405-410)

CODEN: ORTHD ISSN: 0147-7447

Document Type: Journal Record Type: Abstract

Language: English

A new external reduction and fixation system has been developed in which the two processes are carried out by two pieces of apparatus - a reducer and a fixator. Schanz pins are inserted into the fractured bone in the conventional way and the reducer, which is free-standing, is placed adjacent to the limb and attached to the pins. During reduction the proximal bone segment remains stationary while the distal segment is moved to realign the bone. Its movements are carried out mechanically by the reducer and each plane is dealt with separately, the bone segment being moved both linearly and in rotation in that plane. Each movement is obtained by turning one of the three handles on the reducer, and is smoothly and rapidly accomplished with complete control. Once the best possible alignment has been achieved a simple, lightweight, single-side fixator is attached to the pins. The reducer is then unfastened and removed.

15/5/27 (Item 1 from file: 23)

CSA TECHNOLOGY RESEARCH DATABASE

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0010073651 IP Accession No: 200808-71-1313420; 200808-61-1414395; 20081270946;
A08-99-1374155

External setting and correction device for the treatment of bone fractures

Helland, Per
, USA
Publisher Url: <http://patft.uspto.gov/netacgi/nph-NetAcgi?N=&PTO=Search-Adv.htm&r=1&p=1&f=G&88542.PN.&OS=pn/4488542&RS=PN/4488542>

Document Type: Patent

Record Type: Abstract

Language: English

File Segment: Metadex: Mechanical & Transportation Engineering Abstracts: ANTE:

Abstracts in New Technologies and Engineering; Aerospace & High Technology

Abstract

A device for external correction and setting of the bone parts at the site of a fracture, comprising a rigid rod, adjustable in length, with two holders which carry a plurality of

transcutaneous pins. Each of the holders is rotatable in two planes that are disposed at right angles relative to each other. On each holder an arc-shaped guide is provided in a plane parallel to the axis of the rod. Each guide has a radius which approximately corresponds to the presumed distance between the center of the bone and the arc-shaped guide. The arc-shaped guides are provided with worm wheel teeth, and a worm is mounted in each of the holder parts for engagement with the teeth. Each of the holders is a two-part assembly, having a first part fastened to the rod above the arc-shaped guide and a second part carrying the pins and rotatably connected to the first part about an axis of rotation disposed at a right angle in relation to the axis of the curved guide. The pins are disposed at an acute angle in relation to the axis of rotation of the second part of the holder. The centerlines of the pins intersect said axis of rotation at the latter's point of intersection with the axis of the arc-shaped guide.

15/5/28 (Item 2 from file: 23)

CSA TECHNOLOGY RESEARCH DATABASE

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0010073563 IP Accession No: 200808-71-1326336; 200808-61-1427311; 20081283862;
A08-99-1387071

External fixation apparatus

Patton, Stephen M

, USA

Publisher Url: <http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HTOFF&u=/netacgi/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=4475546.PN.&OS=pn/4475546&RS=PN/4475546>

Document Type: Patent

Record Type: Abstract

Language: English

File Segment: Metadex; Mechanical & Transportation Engineering Abstracts; ANTE:
Abstracts in New Technologies and Engineering; Aerospace & High Technology

Abstract:

An external fixation apparatus for the reduction and immobilization of the proximal end segments of a fractured bone is disclosed. The fixation apparatus includes a turnbuckle device, a ball joint device attached to the respective ends of the turnbuckle device, a locking mechanism for the ball joint devices, and a plurality of clamps which are located on tubular members extending from the ball joint devices and in which a pin embedded at one end in the fractured bone segment is received. After the pin is immovably clamped to the tubular member, the subsequent manipulation of the two tubular members relative to one another and adjustment of the turnbuckle device causes the fractured bone segments to be aligned and reduced so that the locking of the ball joint devices and turnbuckle device holds the fractured bone segments in a proper healing orientation relative to one another. Special wrenches for moving each tubular member and attached bone segment and for locking each ball joint device is provided which is supported by the associated tubular member during the reduction and immobilization of the fractured bone segments. An extension device is also provided which can be attached to one of the tubular members and which extends toward the other tubular member. A plurality of clamps are attached to this extension device so that segmented fractures or fractures close to the end of a bone can be reduced and held in place.

15/5/32 (Item 1 from file: 95)

Fulltext available through: [STIC Full Text Retrieval Options](#)

TEME-Technology & Management

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00835596 F94110226957

Finite element analysis and mechanical testing of external fixator designs

(Finite-Elemente-Analyse und mechanische Erprobung an externen Fixateur Konstruktionen
)

Prendergast, PJ; Toland, SJ; Corrigan, JP

Trinity College, Dublin, IRL; Waterford Regional Hospital, Waterford, IRL

Proceedings of the Institution of Mechanical Engineers, Part H (Journal of Engineering in Medicine), v208, nH2, pp103-110 , 1994

Document type: journal article Language: English

Record type: Abstract

ISSN: 0954-4119

Abstract:

Experimental and theoretical stress analysis methods are used to evaluate the mechanical behaviour of external fixation devices as load-bearing structures. For the experimental part, a modular assembly was fabricated from which unilateral and bilateral fixators of different design configurations were assembled and tested under various loading conditions. A reflective photoelasticity technique was used to study the effect of frame configuration on the stress patterns generated around the pin-bone interface. Finite element models of each design were also generated using three-dimensional beam and shell elements. Spring elements were used to model the pin/side-bar clamp. It is shown that close correspondence between the experimental and theoretical methods of investigation is obtained when the flexibility of the pin/side-bar clamp is taken into account. It is also shown that a unilateral design, modified by attaching a second side-bar to the first and connecting them by means of a semicircular component, can achieve some of the structural advantages of bilateral fixators without the clinical disadvantage of transfixing pins.

28/5/41 (Item 41 from file: 155)

Fulltext available through: [STIC Full Text Retrieval Options](#)

MEDLINE(R)

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07114431 PMID: 6627797

Skeletal stabilization with a multiplane external fixation device. Design rationale and preliminary clinical experience.

Fischer D A

Clinical orthopaedics and related research (UNITED STATES) Nov 1983 , (180) p50-62 ,
ISSN: 0009-921X--Print Journal Code: 0075674

Publishing Model Print

Document type: Case Reports; Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

Subfile: AIM; INDEX MEDICUS

A multiplane circumferential frame solves many of the technical, biomechanical, physiologic, and psychologic problems connected with external skeletal fixation. Predrilling of pins, uniplane adjustment capabilities, and titanium and aluminum alloy materials provide adaptability, adjustability, and compatibility. Preliminary clinical trials show multiplane half-pin fixation to the tibia to be adequate and uniquely applicable to complicated open fractures in severely injured limbs.

28/5/48 (Item 2 from file: 5)

Biosis Previews(R)

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16990940 Biosis No.: 200200584451

Articulated expandable spinal fusion cage system

Author: Jackson Roger P

Journal: Official Gazette of the United States Patent and Trademark Office Patents 1262 (4): Sep. 24, 2002 2002

Medium: e-file

Patent Number: US 6454807 Patent Date Granted: September 24, 2002 20020924

Patent Classification: 623-1715 Patent Country: USA

ISSN: 0098-1133

Document Type: Patent

Record Type: Abstract

Language: English

Abstract: An apparatus and method for implanting an articulated spinal fusion cage into the intervertebral space and adjusting the cage in situ to support the adjacent vertebrae in a normal curved alignment. The invention provides a greatly improved modular cage system having a base unit with a pair of sockets for receiving the ends of a pair of legs. The sockets permit pivotal movement of the legs about a posterior fulcrum from a closed, parallel insertion position to an anteriorly open, wedge-shaped orientation. The base has a threaded bore for receiving a driver, which is operable to urge the anterior ends of the legs apart as well as to support the front of the installed fusion cage. Interchangeable drivers are provided having various sized tips. The interior end surface of each leg unit includes a driver-receiving groove for providing torsional stability. Alternatively, a pair of pins and bores are provided on the inner surfaces of the opposed ends for receiving a driver tip. In certain embodiments the base is of integral construction with one of the legs, and includes a socket for receiving a pivot end of the second leg.

28/5/49 (Item 3 from file: 5)

Biosis Previews(R)

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16577437 Biosis No.: 200200170948

Bone fixation system

Author: Eisermann Lukas G (Reprint); Theken Randall R

Author Address: Akron, OH, USA**USA

Journal: Official Gazette of the United States Patent and Trademark Office Patents 1254 (5): Jan. 29, 2002 2002

Medium: e-file

Patent Number: US 6342055 Patent Date Granted: January 29, 2002 20020129 Patent Classification: 606-69 Patent Assignee: Theken Surgical LLC Patent Country: USA ISSN: 0098-1133

Document Type: Patent

Record Type: Abstract

Language: English

Abstract: A novel apparatus for securing the head of a screw in a bone plate is disclosed in which bone fasteners or screws snap-fit into an undercut of fastener receiving openings of the bone plate. The bone fasteners or screws are designed such that they may be removed or repositioned from the snap-fit undercuts with the aid of a driver instrument. An embodiment is also disclosed in which a fusion cage is utilized in connection with bone plate and fasteners.

28/5/62 (Item 11 from file: 73)

Fulltext available through: [STIC Full Text Retrieval Options](#)

EMBASE

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0071384108 EMBASE No: 1979116337

[Return of joint function by means of external bone fixation device](#)

Volkov M.V.; Organisjan O.V.

CITO, Moskva, U.S.S.R.

Corresp. Author/Affil: : CITO, Moskva, U.S.S.R.

Acta Chirurgiae Orthopaedicae et Traumatologiae Cechoslovaca (ACTA CHIR. ORTHOP. TRAUMATOL. CECH.) (cs) December 1, 1978 , 45/5 (365-371)

CODEN: ACOTA ISSN: 0001-5415

Document Type: Journal Record Type: Abstract

Language: Czech Summary language: English; Russian

From the year 1967 onward a number of types of external fixation devices were produced by CITO for the purpose of maintaining the function and shape of injured or surgically treated elbows, wrists, knee and ankle joints. The latest model at present is the joint distraction apparatus type UP. It allows dynamic exercises following plastic joint operations, the correction of faulty joint position in contracture, immobilization of para-articular fractures with simultaneous rehabilitation, the prolongation of bones with simultaneous rehabilitation of mobility in neighbouring joints, and the reposition of neglected dislocations. Its use is relatively simple. Wire with a diameter of 2 mm is inserted in the axis of joint movement, is fixed by a simple mechanism in the arch of the external frame of the device, which is connected to another arch holding the wire by firm adjustable screws. Another similar unit is anchored to the neighbouring bone. Both components are interconnected by screws allowing distraction and which may be adjusted in three planes. The advantage of the apparatus is the gradual and measured manipulation with the joint until the desired position is achieved, with the possibility for simultaneous rehabilitation up to full movement. The separation of joint ends by distraction, i.e. maintaining the joint space throughout the extent of full movement. One case report was presented, describing the successful treatment of a case of neglected elbow dislocation with gradual reduction and the return of full motion.

[File 16] Gale Group PROMT(R) 1990-2008/Aug 29
 [File 160] Gale Group PROMT(R) 1972-1989
 [File 148] Gale Group Trade & Industry DB 1976-2008/Sep 04
 [File 621] Gale Group New Prod.Annou.(R) 1985-2008/Aug 19
 [File 441] ESPICOM Pharm&Med DEVICE NEWS 2008/Aug W4
 [File 149] TGG Health&Wellness DB(SM) 1976-2008/Aug W3
 [File 624] McGraw-Hill Publications 1985-2008/Sep 06
 [File 636] Gale Group Newsletter DB(TM) 1987-2008/Aug 28
 [File 135] NewsRx Weekly Reports 1995-2008/Aug W5

| Set | Items | Description |
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| S1 | 125029 | S SPINE OR SPINAL OR VERTEBRA OR VERTEBRAL OR VERTEBRAE OR INTERVERTEBRA? |
| S2 | 24086 | S (FRACTURE? OR BREAK OR BROKEN OR STABLIZ? OR STABLIS? OR FASTENER? ?)(5N) (BONE OR WRIST OR JOINT OR KNEE OR LEG OR ARM) |
| S3 | 142300 | S S1 OR S2 |
| limitall s3 | | |
| S4 | 2075 | S (EXTERNAL OR FIXATION OR FIXATOR? ?) (5N) (DEVICE? ? OR APPARAT? OR UNIT OR UNITS OR MECHANISM? OR ASSEMBL?) |
| S5 | 1821 | S CAGE OR CAGES OR OUTRIGGER? ? |
| S6 | 1969 | S PIN OR PINS |
| S7 | 5906 | S SCREW OR SCREWS OR STAKE OR STAKES |
| S8 | 44717 | S INTERCHANG? OR MOVEABLE OR MOVABLE OR MOV??? OR ADJUST? OR MODIF? OR RECONFIGUR? OR RECONFIGUR? OR RECONSTRUCT? OR REALIGN? OR REPOSITION? |
| S9 | 93 | S S6(10N)S8 |
| S10 | 311 | S S7(10N)S8 |
| S11 | 391 | S S9 OR S10 |
| S12 | 10 | S S11(20N) (S4 OR S5) |
| S13 | 0 | S S9(S) (S4 OR S5) |
| S14 | 551 | S S8(20N) (S6 OR S7) |
| S15 | 34 | S S14(S) (S4 OR S5) |
| S16 | 34 | S S15 AND S3 |
| S17 | 23 | RD S16 (unique items) |

Nothing relevant from these databases

[File 350] Derwent WPIX 1963-2008/UD=200856
 [File 347] JAPIO Dec 1976-2007/Dec(Updated 080328)

| Set | Items | Description |
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| S1 | 39865 | S SPINE OR SPINAL OR VERTEBRA OR VERTEBRAL OR VERTEBRAE OR INTERVERTEBRA? |
| S2 | 13538 | S (FRACTURE? OR BREAK OR BROKEN OR STABLIZ? OR STABLIS? OR FASTENER? ?)(5N) (BONE OR WRIST OR JOINT OR KNEE OR LEG OR ARM) |
| S3 | 152532 | S (EXTERNAL OR FIXATION OR FIXATOR? ?) (5N) (DEVICE? ? OR APPARAT? OR UNIT OR UNITS OR MECHANISM? OR ASSEMBL?) |
| S4 | 52396 | S S1 OR S2 |

S5 729 S S4 AND (CAGE OR CAGES OR OUTRIGGER? ?)
 S6 534586 S PIN OR PINS
 S7 530624 S SCREW OR SCREWS OR STAKE OR STAKES
 S8 4338577 S INTERCHANG? OR MOVEABLE OR MOVABLE OR MOV??? OR
 ADJUST? OR MODIF? OR RECONFIGUR? OR RECONFIGURE? OR RECONSTRUCT? OR REALIGN? OR
 REPOSITION?
 S9 1899 S S3 AND ((S6 OR S7) (20N) S8)
 S10 0 S S S3 (S) ((S6 OR S7) (10N) S8)
 S11 871 S S3 (S) ((S6 OR S7) (10N) S8)
 S12 266 S S9 AND (S1 OR S2)
 S13 244 S S9 (S) (S1 OR S2)
 S14 26 S S5 (S) ((S6 OR S7) (10N) S8)
 S15 265 S S13 OR S14
 S16 206 S S9 (20N) (S1 OR S2)
 S17 228 S S14 OR S16

17/25/74 (Item 74 from file: 350)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0014329432 & & Drawing available

WPI Acc no: 2004-517205/200449

Related WPI Acc No: 2003-449054; 2006-577599

XRPX Acc No: N2004-409836

Proximal anchor for bone fixation system, has retention structure having at least a portion that is movable between position that engages retention structure of elongate pin and position that allows movement of proximal anchor

Patent Assignee: CACHIA V V (CACH-I); CULBERT B S (CULB-I); HOFFMANN G V (HOFF-I); PADGET M (PADG-I); TRIAGE MEDICAL INC (TRIA-N)

Inventor: CACHIA V V; CULBERT B S; HOFFMANN G V; PADGET M; VON HOFFMANN G

Patent Family (2 patents, 1 & countries)

| Patent Number | Kind | Date | Update | Type |
|----------------|------|----------|--------|------|
| US 20040138665 | A1 | 20040715 | 200449 | B |
| US 6942668 | B2 | 20050913 | 200560 | E |

US 20040138665

Local Applications (no., kind, date): US 2001990587 A 20011119; US 2003745360 A 20031223; US 2003745360 A 20031223

Priority Applications (no., kind, date): US 2001990587 A 20011119; US 2003745360 A 20031223

Alerting Abstract US A1

NOVELTY - The proximal anchor (36) has a retention structure (42) having at least a portion that is movable between first and second positions. The second position engages at least a portion of the retention structure (44) of an elongate pin (26) to prevent proximal movement

of the proximal anchor relative to the pin. The first position allows distal movement of the proximal anchor relative to the pin.

USE - For bone fixation system.

ADVANTAGE - Provides simple and adjustable bone fixation device.

DESCRIPTION OF DRAWINGS - The figure is a cross-sectional schematic view of a bone fixation device positioned within a fractured bone.

17/25/102 (Item 102 from file: 350)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0013047591 & & Drawing available

WPI Acc no: 2003-127024/200312

Bone fracture reset device

Patent Assignee: AHN J Y (AHNJ-I); CHOI I H (CHOI-I); HAN J S (HANJ-I); U & I CO LTD (UIUI-N); YOU & I JH (YOUI-N)

Inventor: AHN J Y; CHO H O; CHO Y J; CHOI I H; CHUNG C H; CHUNG D H; CHUNG S T; HAN G J; HAN H J; HAN J S; HAN S B; HWANG G S; JUNG C H; JUNG D H; JUNG S T; KANG S H; KIM B H; KIM B S; KIM D H; KIM G I; KIM G T; KIM H T; KIM H U; KIM H W; KIM J S; LEE N W; LEE S H; OH C U; OH C W; OH J G; OK I Y; PARK G C; PARK H B; PARK H W; PARK I H; SEO S U; SHIM J S; SHIN C S; SHIN H D; SIM J S; SONG B Y; SONG H R; SUH S W; YANG G H; YOO J D

Patent Family (2 patents, 1 & countries)

| Patent Number | Kind | Date | Update | Type |
|---------------|------|----------|--------|------|
| KR 2002069900 | A | 20020905 | 200312 | B |
| KR 391252 | B | 20030712 | 200409 | E |

KR 2002069900

Local Applications (no., kind, date): KR 200110480 A 20010228; KR 200110480 A 20010228

Priority Applications (no., kind, date): KR 200110480 A 20010228

Alerting Abstract KR A

NOVELTY - A bone fracture reset device is provided to ensure a free movement of the broken bone, thus achieving the complete reset of the broken bone, and to enable the use of other external fixing device.

DESCRIPTION - The bone fracture reset device comprises a support module(10) installed in a longitudinal direction of the broken bone; a correcting module(12) vertically coupled to both ends of the support module to be rotated and linearly reciprocated in order to restore the broken bone into an original condition; and a pin fixing module(14) coupled to the end of the correcting module. In addition, a device for adjusting a length of the support module and rotating the correcting module about an x-axis is provided. The correcting module comprises a plurality of worms and worm gears for rotating the correcting module about a z-axis and a

y-axis, and a screw portion for linearly moving the correcting module along the z-axis, and a member for moving the pin fixing module along the y-axis is provided.

17/25/115 (Item 115 from file: 350)

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0012246289 & & Drawing available

WPI Acc no: 2002-186080/200224

External fixing apparatus for bone fracture treatment

Patent Assignee: HAN C S (HANC-I); U & I CO LTD (UIUI-N)

Inventor: YOON H Y

Patent Family (2 patents, 1 & countries)

| Patent Number | Kind | Date | Update | Type |
|---------------|------|----------|--------|------|
| KR 2001093536 | A | 20011029 | 200224 | B |
| KR 363661 | B | 20021205 | 200335 | E |

KR 2001093536

Local Applications (no., kind, date): KR 200016194 A 20000329; KR 200016194 A 20000329

Priority Applications (no., kind, date): KR 200016194 A 20000329

Alerting Abstract KR A

NOVELTY - An external fixing apparatus for bone fracture treatment is provided to accurately follow the movement of the wrist, and to prevent the generation of adverse effect at wrist joint.

DESCRIPTION - The external fixing apparatus for bone fracture treatment is comprised of a first guide(3) and a second guide(4) facing each other along the longitudinal direction of an arm; a first slider(5) and a second slider(6) coupled to the first and the second guides, to which a pin(50) is coupled; a receiving box(2) having a rotating shaft(1); a moving device installed between the first slider and the rotating shaft for displacing the position of the first slider; a rotating device cooperating the wrist. The rotating device allows the first slider to follow the rotating movement of the wrist.

17/25/121 (Item 121 from file: 350)

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0010821504 & & Drawing available

WPI Acc no: 2001-438626/200147

Small external fixing device for curing fracture and bone lead method

Patent Assignee: SONG H R (SONG-I); YOON B (YOON-I); YOON B G (YOON-I)

Inventor: JEON G S; JUN G S; KO S M; KOH S M; OH C U; OH C W; SEO S U; SONG H R; SUH S W

Patent Family (2 patents, 1 & countries)

| Patent Number | Kind | Date | Update | Type |
|---------------|------|----------|--------|------|
| KR 2001001568 | A | 20010105 | 200147 | B |
| KR 310633 | B | 20011017 | 200234 | E |

KR 2001001568

Local Applications (no., kind, date): KR 199920881 A 19990605; KR 199920881 A 19990605

Priority Applications (no., kind, date): KR 199920881 A 19990605

Alerting Abstract KR A

NOVELTY - A small external fixing device is used to cure fracture, bone fixation and bone lead method in orthopedic surgery, fixes pin fixing stand with quite free angle firmly, is easy to distraction of bone and fix by moving pin fixing stand with parallel, has solidity and convenience by equipping in minimum space structurally.

DESCRIPTION - The small external fixing device comprises a pair of pin fixing stand(10) to fix on numerous pin screw fixing stand with quite free angle firmly; screw equipped to expand and control in both direction; guide bar(20) to induce parallel movement without swing in expanding: the pin fixing stand(10) comprises fixture body(11) of cup shape with hemisphere shape; pin stand(12) has concave face similar to upper curved surface of fixture body(11); pin cover(13) to fix pin screw(P'); fixation bolt(14) with hemisphere head; nut(15); fixture body(11) has rotary preventive pin(16) to prevent rotation of bolt in locking nut(15).

17/25/126 (Item 126 from file: 350)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0010520609 & & Drawing available

WPI Acc no: 2001-122124/200113

XRPX Acc No: N2001-089610

Title: Dynamic wrist and joint fixator using a flexible coupler with two external fixation rods and motion restraint

Patent Assignee: SMITH & NEPHEW INC (SMIN)

Inventor: EVANS D L; ORSAK J E

Patent Family (1 patents, 1 & countries)

| Patent Number | Kind | Date | Update | Type |
|---------------|------|----------|--------|------|
| US 6162223 | A | 20001219 | 200113 | B |

US 6162223

Local Applications (no., kind, date): US 1999289358 A 19990409

Priority Applications (no., kind, date): US 1999289358 A 19990409

Alerting Abstract US A

NOVELTY - The flexible rod connector member (19) has two cylindrically shaped end portions and central spring section (22). Each of the end portions has a cylindrically shaped open center that forms part of an elongated bore, the bore elongates, angulates and/or changes in shape when the flexible spring module connector member flexes, extend and angulates, thereby moving with the metacarpals (13) in relation to the radius (11).

DESCRIPTION - The joint fixator (10) is connected to the patient's radius, wrist (12) and metacarpals. Two proximal bone pins (17) are attached to the patient's radius, two distal bone pins (18) are attached to one or more of the metacarpals. A proximal bone clamp (28) forms an interface between the proximal bone pin (17) and the rod (14) at proximal rod section (15). The distal clamp (29) forms an interface between the distal bone pins and the rod. Restriction of metacarpal movement is achieved by the introduction of a removable clip on the spring.

USE - Provides rotational support to wrist during healing of the metacarpals.

ADVANTAGE - The fixator conforms to the natural axis of the rotation of the wrist joint, thereby avoiding the possibilities of bone fragment displacement. The removable clip enables the motion of the spring, and, hence the wrist, to be restrained to the required amount; more rigidly in the initial healing period, and then removal after three to four weeks. The compression of the spring counters the tension force of the ligamentotaxis to prevent loss of distraction. The spring also provides exercise for the wrist.

17/25/154 (Item 154 from file: 350)

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0008471176

WPI Acc no: 1997-552189/199751

XRAM Acc no: C1997-176234

XRPX Acc No: N1997-460134

Compact external fixator for the treatment of fractures in small bones - is adjustable in all planes to exert a distraction or compression on the fracture, whilst permitting X-ray examination thereof

Patent Assignee: ORTHOFIX SRL (ORTH-N)

Inventor: DEBUTSUDO N; FACCIOLO G; NELSON D; VENTURINI D

Patent Family (15 patents, 19 & countries)

| Patent Number | Kind | Date | Update | Type |
|---------------|------|----------|--------|------|
| EP 807419 | A2 | 19971119 | 199751 | B |
| AU 199720074 | A | 19971120 | 199804 | E |
| ZA 199704144 | A | 19980225 | 199813 | E |
| JP 10043204 | A | 19980217 | 199817 | E |
| US 5810813 | A | 19980922 | 199845 | E |
| US 5951556 | A | 19990914 | 199944 | E |

| | | | | |
|--------------|----|----------|--------|---|
| MX 199703557 | A1 | 19980601 | 200009 | E |
| AU 722193 | B | 20000727 | 200041 | E |
| IT 1289103 | B | 19980925 | 200128 | E |
| MX 198967 | B | 20001009 | 200212 | E |
| EP 807419 | B1 | 20020814 | 200255 | E |
| DE 69714645 | E | 20020919 | 200269 | E |
| CN 1169279 | A | 19980107 | 200321 | E |
| ES 2180000 | T3 | 20030201 | 200322 | E |
| CN 1127325 | C | 20031112 | 200568 | E |

EP 807419

Local Applications (no., kind, date): EP 1997201442 A 19970513; AU 199720074 A 19970506; ZA 19974144 A 19970514; JP 1997122724 A 19970514; US 1997825909 A 19970402; US 1997825909 A 19970402; MX 19973557 A 19970514; AU 199720074 A 19970506; IT 1996VR44 A 19960515; MX 19973557 A 19970514; EP 1997201442 A 19970513; DE 69714645 A 19970513; EP 1997201442 A 19970513; CN 1997111548 A 19970514; EP 1997201442 A 19970513; CN 1997111548 A 19970514

Priority Applications (no., kind, date): IT 1996VR44 A 19960515; EP 1997201442 A 19970513

Alerting Abstract EP A2

An external fixator (1) comprises: (a) a pair of clamps (2,3) for bone bolts (V) connected to a telescopic central body (4) by means of ball joints (5,6), ball joints (5,6) being locked in position by transverse eccentric pins (34,35), wherein (b) said central body (4) consists of a male member (7) made from X-ray transparent material selected from polyethers, polysulphonates, polyoxymethalenes, or polyetherimides, and a female member (8) made of aluminium alloy, the wall thickness of which is 1 mm., to be partly X-ray transparent, members (7,8) being provided with anti-rotation means, characterised in that (c) a tensioning device may be coupled to the ends of the telescopic members (7,8) to exert a distraction or compression on the fracture.

USE - For the treatment of fractures in small bones, especially applicable to small children.

ADVANTAGE - A compact device which permits X-ray examination of the fracture from all viewpoints.

17/25/174 (Item 174 from file: 350)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0007248542 & & Drawing available

WPI Acc no: 1995-301944/199539

XRPX Acc No: N1995-229251

External fixation system for stabilising bone fractures - uses number of pins insertable into bone at discrete longitudinal positions with at least two pins being insertable on opposite sides of fracture and includes bar disposed adjacent to and securable to ends of pins

Patent Assignee: MEMPHIS ORTHOPAEDIC DESIGN INC (MEMP-N)
Inventor: LEE H E; RUSSELL T A

Patent Family (1 patents, 1 & countries)

| Patent Number | Kind | Date | Update | Type |
|---------------|------|----------|--------|------|
| US 5443464 | A | 19950822 | 199539 | B |

US 5443464

Local Applications (no., kind, date): US 199317933 A 19930216

Priority Applications (no., kind, date): US 199317933 A 19930216

Alerting Abstract US A

The external fixation system has a hexagonal rod as the primary support mechanism with a number of fixation components adjustably secured to it. The fixation components preferably include at least one pin secured to the hexagonal rod by a clamping mechanism which provides multiple degrees of adjustability for enhanced pin placement. The clamping mechanism comprises a clamp member and ball collet having a hexagonal opening formed therein, wherein the ball collet fits within a cavity in the clamp member with the rod extending through it, and a retaining nut used to compress the ball collet thereby grippingly engaging the rod and securing the clamp member to the rod.

The clamp member is adjustable to any desired position both longitudinally and peripherally about the rod. Each pin is secured within a clamp member through the use of similar ball collets and retaining nuts, and is angularly adjustable relative to the clamp member.

Preferably a ring member may also be attached to the rod, with additional fixation components such as tension wires, buttress pins, and the like, adjustably secured to the ring member by similar clamping mechanisms.

ADVANTAGE - Minimises the time required to adjust the position of the surgical pins.

17/25/191 (Item 191 from file: 350)

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0005642520

WPI Acc no: 1991-252389/199134

XRPX Acc No: N1991-192370

External fixator for bone - has telescoping unit with telescopically engaging inner and outer parts and they give limited axial reciprocal movement

Patent Assignee: IDE B H (IDEB-I); POHL A P (POHL-I)

Inventor: IDE B H; POHL A P

Patent Family (9 patents, 18 & countries)

| Patent Number | Kind | Date | Update | Type |
|---------------|------|----------|--------|------|
| WO 1991011149 | A | 19910808 | 199134 | B |
| AU 199172193 | A | 19910821 | 199147 | E |
| EP 466882 | A | 19920122 | 199204 | E |

| | | | | |
|-------------|----|----------|--------|---|
| JP 4505407 | W | 19920924 | 199245 | E |
| AU 648542 | B | 19940428 | 199422 | E |
| EP 466882 | A4 | 19920506 | 199521 | E |
| EP 466882 | B1 | 19950809 | 199536 | E |
| DE 69111931 | E | 19950914 | 199542 | E |
| US 5454810 | A | 19951003 | 199545 | E |

WO 1991011149

Local Applications (no., kind, date): WO 1991AU36 A 19910205; AU 19908440 A 19900205; ZA 1991759 A 19910201; EP 1991903355 A 19910205; JP 1991503629 A 19910205; WO 1991AU36 A 19910205; AU 199172193 A 19910205; KR 1990702694 A 19901228; EP 1991903355 A 19910205; WO 1991AU36 A 19910205; DE 69111931 A 19910205; EP 1991903355 A 19910205; WO 1991AU36 A 19910205; US 1992768917 A 19920727; US 1994253192 A 19940602

Priority Applications (no., kind, date): AU 19908440 A 19900205

Alerting Abstract WO A

The telescopic external fixing has a main telescoping tube with a pair of elongate telescopically engaging parts. These are adapted for relative axial sliding movement along the longitudinal axis of the unit. The outer one of these parts is a housing with a bore extending through it.

The inner part is a rod housed with a sliding fit in the bore and it is non-rotatable about the axis. The rod and bore have a non-circular profile which has at least one planar surface. ADVANTAGE - Allows healing to progress while allowing patients to retain mobility of neighbouring joints. @ (34pp Dwg.No.1/10) @

17/25/198 (Item 198 from file: 350)

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0004428938

WPI Acc no: 1988-167660/198824

XRAM Acc no: C1988-074836

XRPX Acc No: N1988-128119

External bone fracture fixing device - has half pin clamping adjustable distal and proximal carriages

Patent Assignee: HARRINGTON ARTHRITIS RES (HARR-N)

Inventor: HANSEN T M; KOENEMAN J B; MESA M P; PHILLIPS M; WEINSTEIN A M

Patent Family (1 patents, 1 & countries)

| Patent Number | Kind | Date | Update | Type |
|---------------|------|----------|--------|------|
| US 4747400 | A | 19880531 | 198824 | B |

US 4747400

Local Applications (no., kind, date): US 1984604047 A 19840426; US 1985791222 A 19851025; US 1986828051 A 19860210; US 1987122397 A 19871119

Priority Applications (no., kind, date): US 1985791222 A 19851025

Alerting Abstract US A

A device for positioning and immobilising the two segments of a fractured bone comprises a frame with distal and proximal carriages at opposite ends, each clamping respective half pins inserted into the respective segments and the proximal carriage movable w.r.t. the frame to adjust the proximal segment position.

The distal carriage has a pin clamp movable w.r.t. the carriage along a part-spherical surface with radius of fixed length and origin at the centre of the fracture to permit precise positioning of the distal segment. The frame pref. has side rails each with a polyimide foam core, wrapped with a composite of graphite or glass fibres impregnated with thermoplastic or thermosetting resin.

ADVANTAGE - Permits fine positioning and alignment, with easy access for soft tissue treatment and radiology

17/25/210 (Item 210 from file: 350)

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0003145855

WPI Acc no: 1984-242045/198439

XRPX Acc No: N1984-181071

Fracture repositioning and fixation apparatus - has pin holders which are made as paired carriages with apertures holding studs bearing pins

Patent Assignee: SARAT MEDICINE INST (SAME-R)

Inventor: ABOLINA A E; ZMIGUNOV A K

Patent Family (1 patents, 1 & countries)

| Patent Number | Kind | Date | Update | Type |
|---------------|------|----------|--------|------|
| SU 1069798 | A | 19840130 | 198439 | B |

SU 1069798

Local Applications (no., kind, date): SU 3456572 A 19820618; SU 3456573 A 19820618

Priority Applications (no., kind, date): SU 3456572 A 19820618

Alerting Abstract SU A

The apparatus for the repositioning and fixation of bone fractures has frames with pins and pin holders, linked by threaded rods, and fixation elements.

To make possible the repositioning of the malleoli in three planes, the pin holders are made in the form of L-shaped carriages (7) with apertures (8) in which studs (9) are fastened. The carriages (7) are arranged in pairs on the two opposite sides of the working frame (2). There are slides (5) mounted on two opposite sides of

the frame (2) between the carriages (7), and the pins (11) are mounted on the studs (9).

Bul.4/30.1.84

17/25/211 (Item 211 from file: 350)

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0003084223

WPI Acc no: 1984-176537/198428

External fixation device for fractured bones - has series of pins passing through sections of fractured bone and held in joined adjustable frame

Patent Assignee: KENNY C H (KENN-I)

Inventor: KENNY C H

Patent Family (1 patents, 1 & countries)

| Patent Number | Kind | Date | Update | Type |
|---------------|------|----------|--------|------|
| US 4456004 | A | 19840626 | 198428 | B |

US 4456004

Local Applications (no., kind, date): US 1981285600 A 19810721

Priority Applications (no., kind, date): US 1981285600 A 19810721

Alerting Abstract US A

Pins passing through bone portions are held stationary relative to each other by a frame which includes universal joints, articulation couplings and adjustable length rods. Springs are provided in the assembly for applying compression to the universal joints allowing for the application of compression and the simultaneous application of axial loading to the bone portions.

The universal joints and other components are arranged to provide free sliding of the components relative to each other upon loosening of the universal joints. Desired motion or force application at the fracture site may be provided.

ADVANTAGE - to provide the simultaneous application of axial loading and compression, facilitating healing so that long healing times associated with external fixation systems may be overcome. Sliding of the external fixation frame components can allow, upon loosening of universal joint components of the frame, intermittent axial loads to be applied to the fracture site.

17/25/212 (Item 212 from file: 350)

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0003060903

WPI Acc no: 1984-151734/198424

Related WPI Acc No: 1982-A9507E

Method of installing orthopaedic pin - by clamping old pin and sheath in holder, inserting new pin through sheath and withdrawing old pin

Patent Assignee: ACE ORTHOPEDIC MFG (ACEO-N)

Inventor: FISCHER D A

Patent Family (1 patents, 1 & countries)

| Patent Number | Kind | Date | Update | Type |
|---------------|------|----------|--------|------|
| US 4450834 | A | 19840529 | 198424 | B |

US 4450834

Local Applications (no., kind, date): US 197985996 A 19791018; US 197987218 A 19791022; US 1981290740 A 19810807

Priority Applications (no., kind, date): US 1981290740 A 19810807

Alerting Abstract US A

The method is for installing a pin between the soft tissue and bone of a user, parallel with a previously installed pin in an external fixation device. The method comprises clamping an exposed free end of the previously installed pin into one aperture of a multi-aperture pin holder, and inserting a tubular sheath through an adjacent one of the apertures in the pin holder. The method then comprises extending the sheath through the soft tissue to contact the bone, and inserting a drill through the sheath to drill a hole through the bone along an axis parallel to the axis of the sheath.

The method also involves removing the drill from the sheath and measuring the dia. of the bone at the location of the hole. A pin is inserted through the sheath and into the hole drilled in the bone, and the sheath is withdrawn from the pin holder while maintaining the pin within the bone. The exposed free end of the newly installed pin is then clamped into the adjacent aperture in the pin holder.

17/25/214 (Item 214 from file: 350)

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0002870735

WPI Acc no: 1983-H5501K/198323

Arrangement for external bone correction and fixation - has longitudinally adjustable rod with axially adjustable nail holders in arcuate guides

Inventor: HELLAND P

Patent Family (8 patents, 6 & countries)

| Patent Number | Kind | Date | Update | Type |
|---------------|------|----------|--------|------|
| DE 3243287 | A | 19830601 | 198323 | B |
| GB 2110094 | A | 19830615 | 198324 | E |
| FR 2517195 | A | 19830603 | 198327 | E |

| | | | | |
|--------------|---|----------|--------|---|
| NO 198104051 | A | 19830620 | 198331 | E |
| US 4488542 | A | 19841218 | 198505 | E |
| GB 2110094 | B | 19850509 | 198519 | E |
| CH 658588 | A | 19861128 | 198650 | E |
| DE 3243287 | C | 19910307 | 199110 | E |

DE 3243287

Local Applications (no., kind, date): DE 3243287 A 19821123; GB 198232955 A 19821118;

NO 19814051 A 19811127; US 1982441994 A 19821116; DE 3243287 A 19821123

Priority Applications (no., kind, date): NO 19814051 A 19811127; DE 3243287 A 19821123

Alerting Abstract DE A

The arrangement for correction and external fixation of a broken bone has a longitudinally adjustable rod (1) with two holders (8,9) which have a number of nails (14). Each holder has a curved guide member (12) with a worm wheel (12') which meshes with a worm gear (15) in the holders, and each holder has two parts.

The first part (16) is fixed to the adjustable rod above the guide member, whilst the second part carries the nails and can rotate with the first part about an axis at right angles to the axis of the guide member. The nails form a sharp angle with the axis of the second part of the holder, and the centre line of the nails passes through the point of intersection of the axis of the guide member and the axis of the second part of the holder. For correction, the worm gear, which alters the angle between the bone and the rod, is adjusted.

17/25/216 (Item 216 from file: 350)

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0002826169

WPI Acc no: 1983-C8601K/198309

External operated bone fixation appts. - has lower set of pins movable but held in tension by spring

Patent Assignee: BRITISH TECHNOLOGY GROUP LTD (BRTE-N); NAT RES DEV CORP (NATR)

Inventor: EVANS M; HARRIS J D

Patent Family (8 patents, 5 & countries)

| Patent Number | Kind | Date | Update | Type |
|---------------|------|----------|--------|------|
| DE 3229313 | A | 19830224 | 198309 | B |
| GB 2104782 | A | 19830316 | 198311 | E |
| GB 2104782 | B | 19841128 | 198448 | E |
| US 4502473 | A | 19850305 | 198512 | E |
| CA 1193506 | A | 19850917 | 198542 | E |
| US 4570625 | A | 19860218 | 198610 | E |
| CH 659577 | A | 19870213 | 198710 | E |
| DE 3229313 | C2 | 19940714 | 199426 | E |

DE 3229313

Local Applications (no., kind, date): DE 3229313 A 19820805; GB 198124043 A 19810806;
GB 198221697 A 19820727; GB 198124043 A 19810806; GB 198221697 A 19820727; US
1982404498 A 19820802; US 1984662551 A 19841019; DE 3229313 A 19820805

Priority Applications (no., kind, date): GB 198124043 A 19810806; GB 198221697 A
19820727

Alerting Abstract DE A

The apparatus has a main support bar (21) with two sets of fixation pins fixed to it. The upper set of fixation pins (27) are fastened securely and are fixed into the upper half of the broken bone. The lower two pins have projecting parts fastened to a secondary bar (29). The lower two pins can slide up the main bar (21) and are held in tension by an adjustable spring (33). This elastic fixing of the bone permits callus formation whilst still maintaining adequate support as in a conventional external fixation device.